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BEFORE THE
POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

IN THE MATTER OF)
ATLANTIC RICHFIELD COMPANY,)
Appellant,)
v.)
STATE OF WASHINGTON,)
DEPARTMENT OF ECOLOGY,)
Respondent.)

PCHB No. 298

FINAL FINDINGS OF FACT,
CONCLUSIONS OF LAW
AND ORDER

This matter is an appeal of a \$20,000 civil penalty assessed against Appellant for allegedly causing or aiding an oil spill. Hearing was held before Art Brown, Chairman, W. A. Gissberg and Chris Smith, Members on August 30 and 31 and September 1, 1976, at Lacey, Washington. Hearing examiner William A. Harrison presided. Respondent elected a formal hearing.

Appellant was represented by its attorney, Thomas J. McKey of Bogle & Gates, Seattle, Washington. Respondent was represented by Charles W. Lean, Assistant Attorney General. Eugene E. Barker, Olympia

1 court reporter, provided recording services.

2 Having heard the evidence, having examined the exhibits, and having
3 heard the arguments of counsel, and the Board having received exceptions
4 to its proposed Findings, Conclusions and Order and replies thereto,
5 said exceptions being granted in part and denied in part, the Pollution
6 Control Hearings Board makes the following

7 FINDINGS OF FACT

8 1. Appellant, Atlantic Richfield Company, (ARCO) owns and operates
9 an oil refinery and associated dock facilities at Cherry Point. The
10 refinery was completed and began operating in December, 1971.

11 2. A large dock extends seaward from the refinery to deep water
12 to accommodate tankers which call there to load refined product or
13 discharge crude oil. On the ARCO dock are eight steel towers known
14 as "Chiksan arms." (Exhibit S-7A.) These devices connect the ship's
15 manifold with fixed piping which runs from the Chiksan arm along the
16 dock to an ARCO storage tank on shore. The ship to shore oil pipeline
17 is completed by connecting the Chiksan arm to the ship's manifold.

18 3. The Chiksan arm is counterbalanced so that when empty, it
19 exerts zero force on the ship's manifold. When the arm becomes filled
20 with product or crude oil, however, it becomes heavy and exerts a
21 force on the ship's apparatus. In its bid specifications for the
22 Chiksan arms, ARCO required:

23 Where the weight of a fully loaded arm exceeds the carrying
24 capacity of the tanker manifold flange, a device for
25 supporting the outboard swivel assembly on the tanker deck
shall be provided. (Exhibit R-5, p. 4, § 4.0 (h.))

26 4. Previously on February 4, 1972, ARCO had experienced an oil

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1 spill involving the tanker DAVID E. DAY at the Cherry Point dock which
2 also involved a Chiksan arm. That arm was being used without the
3 supporting device described in the bid specifications quoted
4 above. The M/V DAVID E. DAY had a cast iron gate valve attached to the
5 end of its manifold. To this valve the ship had also connected two
6 cast iron "reducers" which varied the diameter of the pipeline from
7 12 inches to 10 inches and from 10 inches to 8 inches. To these reducers
8 ARCO added or supplied a single 8 inch to 12 inch reducer to connect the
9 ship's manifold to ARCO's 12 inch Chiksan arm. The weight of the cast
10 iron reducers also exerted a force on the ship's manifold. The ship's
11 cast iron gate valve fractured during transfer of the oil, resulting
12 in the spill.

13 5. The findings of a U. S. Coast Guard investigation of the
14 DAY spill (Exhibit S-5) confirmed the downward force of the Chiksan
15 arm. The findings noted that shipboard personnel said that in the
16 future they would place a screw jack under the Chiksan arm to reduce
17 the downward thrust on the ship's manifold valve. The Coast Guard
18 findings recommended use of such a jack to prevent further oil spills.

19 6. After the June 4, 1972, oil spill at Cherry Point which is
20 the subject of this appeal, the Coast Guard conducted another
21 investigation. Testifying under oath, Mr. William Jack Racine,
22 Manager of ARCO's Cherry Point refinery, said, in regard to ARCO's use
23 of a jack to support its Chiksan arm:

24 As you know, we had a cast iron valve break aboard the DAVID
25 E. DAY on February 4th. At that time an engineering check
26 was made to determine if the Chiksan equipment was causing
excess amount of strain to be put upon the ship's piping.
Our engineering report showed that it was not, but in any

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1 event it was added (sic) to the safety of the operation to
2 use the jack supports to reduce the forces that the Chiksan
3 equipment might be putting on the ship's manifold and since
4 that time we have used the jacks. (Emphasis added.)
5 (Exhibit S-21, p. 31.)

6 7. On June 4, 1972, the tanker WORLD BOND was moored at ARCO's
7 Cherry Point dock, ready to discharge its cargo of crude oil. The
8 WORLD BOND is owned by the Alexis Shipping Company.¹

9 When it arrived at Cherry Point, the WORLD BOND's manifold
10 consisted of 14 inch pipe, capped by a gate valve to which was attached
11 a 14 inch to 8 inch cast iron reducer. The reducer was affixed by
12 WORLD BOND personnel some years previously and had corroded so as to
13 be impossible of removal by the ship's crew. At ARCO's direction, this
14 piping had been aligned opposite an ARCO 16 inch Chiksan arm.

15 To the already mounted 14 inch to 8 inch cast iron reducer there
16 was added a cast iron 8 inch to 10 inch reducer, supplied by the ship,
17 and two steel reducers, 10 inch to 12 inch and 12 inch to 16 inch,
18 supplied by ARCO. The ship's crew bolted up the flanges of the
19 reducers, ARCO hydraulically maneuvered the Chiksan arm aboard the
20 ship in proximity to the cargo line, both the ship's crew and ARCO
21 employees aligned the outboard reducer with the Chiksan arm and the
22 ship's crew bolted up the remaining flange connections.

23 8. After the connection was made, ARCO personnel on the dock
24 supplied a jack for placement under the Chiksan arm. The jack was
25

26 1. See Alexis Shipping Company v. State of Washington, Department
27 of Ecology, PCEB No. 297, of which only the pendency before the
Pollution Control Hearings Board is hereby officially noticed.
WAC 371-08-188. No Finding or Conclusion herein is based upon the
Alexis record.

1 | procured from the ARCO welding shop where it was normally used to hold
2 | up pipes being welded or worked on. It was of a type and design never
3 | intended for support of a Chiksan arm.

4 | ARCO's engineering department was neither consulted nor did it
5 | approve the selection of the jack which was used. The design of the
6 | jack was insufficient to bear the weight of the loaded Chiksan arm
7 | and the multiple cast iron reducers. The jack was of a "friction"
8 | design (Exhibits S-7D and E). It consisted of two telescoping tubes,
9 | the outer tube welded to three legs and the inner tube topped with a
10 | cradle. The jack is adjusted by slipping the inner tube upwards into
11 | position. The jack is then locked in place by a set screw which is
12 | threaded through the outer tube and which butts against the inner tube.
13 | The evidence establishes that the friction set screw is the jack's
14 | most sensitive feature. Because of this, the jack was not as strong
15 | as its welds (capacity of 3,570 to 4,360 pounds) but only as strong
16 | as its friction lock (capacity of 500-700 pounds).

17 | 9. At 4:00 a.m. on June 4, 1972, the ship began pumping oil to
18 | the shore facility. The pumps began slowly and increased speed
19 | gradually to allow the crew an opportunity to check all fittings. As
20 | the pumping began, the weight of the oil was added to the weight of the
21 | multiple reducers and Chiksan arm. The accumulated weight easily
22 | exceeded the 700 pound capacity of the jack. The multiple reducers and
23 | Chiksan arm remained aloft but solely because of the ship's fittings
24 | which, for a time, withstood the increased weight.

25 | The weight of the multiple reducers and Chiksan arm had
26 | reached some 4,640 pounds. This substantial weight, combined with

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1 the leverage and forces involved, imposed a stress of some 25,000
2 to 27,000 pounds per square inch (p.s.i.) on the hub of the ship's
3 14 inch to 8 inch cast iron reducer. That reducer fractured, the other
4 reducers and Chiksan arm fell to the deck and oil was discharged from
5 both open ends of the ruptured line into waters of the State of
6 Washington.

7 On and prior to June 4, 1972, cast iron was an approved material
8 for tanker fittings under U. S. Coast Guard regulations. The
9 cast iron reducer which fractured was constructed to an industry
10 standard (ASME 30) which specifies an ultimate tensile strength of
11 30,000 p.s.i. and a minimum of 24,000 p.s.i.

12 10. Approximately 480 barrels of crude oil entered the water.
13 Some oil which cascaded over the starboard side of the ship escaped
14 an encircling boom which, because of prevailing wind conditions,
15 was too close to the ship's side to prevent spilled oil from escaping.
16 The boom further contained a 100 foot gap. The duty to set and
17 maintain that encircling boom belonged to ARCO and was a requisite
18 of its Army Corps of Engineers' Permit No. 071-OYB-3-000001. The
19 improper installation of the boom contributed to the escape of
20 approximately 25 barrels of crude oil into the water outside the boom.
21 Ultimately, these 25 barrels of oil reached beaches extending one-half
22 mile south of Cherry Point and 18 miles north into Canada, including
23 the recreational beaches of White Rock, Canada, located approximately
24 nine nautical miles north. Crude oil clings tenaciously to the
25 shoreline, and did so here, proving difficult or impossible to remove
26 from the rocky shore.

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1 11. ARCO took immediate action to commence cleanup of the oil
2 spill. Portable skimmers, operated from the dock, were placed in
3 service. ARCO employees, in their privately owned boats, assisted.
4 After the passage of many hours, during which wind and tide dispersed
5 the crude oil even further, ARCO realized that stronger measures
6 would have to be taken. Consequently, some 36 hours after the spill,
7 a special watercraft designed to handle oil spill cleanup arrived.
8 Had this watercraft, known as the "Eusky Senior Skimmer," arrived
9 immediately, substantially less oil would have gone unrecovered.

10 ARCO expended \$302,000 on cleanup and paid some \$75,000 in
11 claims to persons suffering damage from the spill.

12 12. Any Conclusion of Law hereinafter recited which should be
13 deemed a Finding of Fact is hereby adopted as such.

14 From which comes the following

15 CONCLUSIONS OF LAW

16 1. The Hearings Board has jurisdiction of the parties and the
17 subject matter of this review.

18 2. ARCO argues that DOE's factual contentions set out in the
19 document entitled "Pre-Hearing Stipulations" are at variance from
20 the contentions in the "Notice of Penalty Incurred and Due" (Docket
21 No. DE 72-144). DOE is limited to proving the violation on the theory
22 advanced in the Notice of Penalty Incurred and Due, absent a timely
23 amendment of its Notice. Texaco, Inc. v. State of Wash. Dept. of
24 Ecology, PCHE No. 930. In this matter, however, the document entitled
25 "Pre-Hearing Stipulations" was drawn up and known to ARCO before hearing
26 and at no time was ARCO misled. Had there been surprise or prejudice,

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1 ARCO's remedy would be to request a continuance, which it did not.
2 The contentions set out in the "Pre-Hearing Stipulations" properly
3 formed the hearing issues.

4 3. DOE contends that ARCO has violated RCW 90.48.350 and that
5 section is the basis for the penalty assessed. (Notice of Penalty
6 Incurred and Due, Docket No. DE 72-144). RCW 90.48.350 states, in
7 relevant part:

8 Any person who intentionally or negligently discharges oil,
9 or causes or permits the entry of the same, shall incur, in
10 addition to any other penalty as provided by law, [see
11 RCW 90.48.144, 90.48.080 and 90.48.320] a penalty in the amount
12 of up to twenty thousand dollars for every such violation; said
13 amount to be determined by the director of the commission
14 [succeeded by DOE] after taking into consideration the gravity
15 of the violation, the previous record of the violator in
16 complying, or failing to comply, with the provisions of
17 chapter 90.48 RCW, and such other considerations as the
18 director [DOE] deems appropriate. Every act of commission
19 or omission which procures, aids or abets in the violation
20 shall be considered a violation under the provisions of this
21 section and subject to the penalty herein provided for.
22 [Brackets added.]

23 4. Negligence. Negligence is committed whenever there is a
24 failure to exercise the ordinary care which a reasonable person would
25 exercise in the circumstances.² The events of this case took place
26

27 2. Washington Pattern Jury Instructions (Civil) WPI 10.01:

28 "Negligence is the failure to exercise ordinary care. It
29 is the doing of some act which a reasonably careful person would not
30 do under the same or similar circumstances or the failure to do
31 something which a reasonably careful person would have done under
32 the same or similar circumstances."

33 WPI 10.02

34 "Ordinary care means the care a reasonably careful person
35 would exercise under the same or similar circumstances."

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1 against a background of these salient circumstances: First, ARCO
2 acknowledged that a fully loaded Chiksan arm may "exceed the carrying
3 capacity" of ships' piping, causing it to fracture. ARCO specified that
4 a supporting device should be used to counteract this strain. Second, a
5 Chiksan arm was connected to the M/V DAVID E. DAY, only four months
6 before the present incident, when that ship's cast iron fitting
7 fractured and an oil spill resulted. Third, U. S. Coast Guard findings
8 in the DAVID E. DAY incident endorsed the use of a screw jack to relieve
9 the weight of a loaded Chiksan arm. Fourth, ARCO's refinery manager
10 acknowledged that ARCO's standard procedure, after the DAVID E. DAY
11 incident, was to employ a jack for support of Chiksan arms. The
12 express purpose of this procedure was to reduce the forces which the
13 Chiksan equipment placed on ships' piping.

14 Even against this background of operating experience, ARCO
15 made no precise determination of the downward pressure exerted by a
16 loaded Chiksan arm with multiple reducers. Neither did ARCO make
17 any analysis of the jack design to determine its adequacy to relieve
18 the critical strain exerted upon ships' piping. ARCO's engineering
19 department did not examine nor endorse the jack selected by ARCO
20 operating personnel, one which was borrowed from the welding shop. The
21 jack selected by ARCO personnel was never intended for the support of a
22 Chiksan arm and made no more than a cosmetic contribution to the oil
23 transfer process. ARCO therefore presented to the ship a Chiksan arm
24 which, in the normal course of transferring oil, placed more stress
25 upon the ship's reducer (25,000-27,000 p.s.i.) than a sound reducer
26 could withstand (24,000 p.s.i.). Such conduct by ARCO, in the

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1 | circumstances described, constitutes negligence.

2 | 5. Causation. Causation, or proximate cause, means a cause
3 | which in a direct sequence, unbroken by any new, independent cause,
4 | produces the event complained of and without which such event would not
5 | have happened.³ ARCO's failure to provide adequate support for its
6 | Chiksan arm, which failure was negligent, directly produced the
7 | fracture which resulted in this oil spill. But for ARCO's negligence,
8 | the spill would not have occurred. Such negligence on ARCO's part
9 | was the major cause of the oil spill which is the subject of this
10 | appeal.

11 | 6. Amount of Penalty. RCW 90.58.350 sets out guidelines for
12 | determining the amount of penalty.

13 | "Gravity of the violation:" ARCO, at the time of the violation
14 | was aware that a loaded Chiksan arm might place critical strain on a
15 | ship's piping. This is apparent from ARCO's bid specifications which
16 | mentioned the need of a supporting device for a Chiksan arm; an oil
17 | spill occurring only four months before under circumstances similar to
18 | those found here; ARCO's stated standard procedure of using jacks to
19 | support its Chiksan arms (whether those jacks were adequate or not).
20 | ARCO failed to make an engineering analysis to determine the downward
21 | pressure exerted by a loaded Chiksan arm. ARCO made no engineering
22 | study to determine a jack design which would have been adequate and
23 | suitable to relieve the critical strain exerted upon ship's piping.
24 | These minimal precautions would have relieved ARCO personnel from

25 | _____
26 | 3. Washington Pattern Jury Instruction WPI 15.01.

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1 making an improvisational selection of whatever jack was close at hand,
2 and could have averted this oil spill. ARCO's negligence was the major
3 cause of the oil spill.

4 "Previous record of the violator:" Within four months prior to
5 this oil spill there was an oil spill at the same refinery under
6 circumstances similar to those found here.

7 "Other considerations as the director deems appropriate:" Four
8 hundred eighty barrels of crude oil entered the water and parts of that
9 spill spanned a distance of 18 miles, reaching Canada, and coated the
10 shorelines of both public and private beaches. Funds expended by
11 ARCO to remedy the damage totaled some \$377,000. Yet the evidence is
12 clear that cleanup equipment proportionate to the spill, in the form
13 of the Husky Senior Skimmer, went unused for some 36 hours after the
14 spill, while the cleanup effort was limited to the use of smaller,
15 less effective skimmers. Substantial amounts of oil went unrecovered
16 because of this choice by ARCO.

17 After application of the statutory guidelines relevant to the
18 determination of a penalty under RCW 90.48.350, we conclude that a
19 \$20,000 penalty is amply justified by the evidence in this case.

20 7. We have reviewed the other legal contentions made by ARCO
21 and find them to be without merit.

22 8. Any Finding of Fact which should be deemed a Conclusion of
23 Law is hereby adopted as such.

24 Accordingly, it is the Board's

25 ORDER

26 The \$20,000 civil penalty imposed by DOE's Notice of Penalty
27 Incurred and Due (Docket No. DE 72-144) is hereby affirmed.

1 DONE at Lacey, Washington, this 22d day of February, 197

2 POLLUTION CONTROL HEARINGS BOARD

3 Art Brown
4 ART BROWN, Chairman

5 W. A. Gissberg
6 W. A. GISSBERG, Member

7 Chris Smith
8 CHRIS SMITH, Member

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